

# Entrepreneurial Personality Traits Towards Entrepreneurial Potential of TVET Students in Malaysia: A PLS-SEM Approach

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## Abstract

*The paper explores the effects of the need for achievement and entrepreneurial innovativeness on the entrepreneurial potential of TVET students in Malaysia. In addition, the moderating impact of entrepreneurial mentoring is also examined. A survey was carried out online due to the pandemic COVID-19. Two hundred fifty-two usable responses were then analysed using Structural Equation Modelling of Partial Least Square. Findings showed that a positive relationship exists between entrepreneurial potential, the need for achievement, and the entrepreneurial innovation of students. However, entrepreneurial mentoring does not moderate the relationships between entrepreneurial personality and entrepreneurial potential. Previous research on entrepreneurial mentoring as a moderator still needs more extensive study. The study provides insights into the entrepreneurial potential of TVET students. Recommendations and suggestions are provided*

**Keywords:** Needs of Achievement, Entrepreneurial Innovativeness, Entrepreneurial Mentoring, Entrepreneurial Potential

## ARTICLE INFORMATION

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## 1.0 INTRODUCTION

Many people in Malaysia have lost their jobs because of the COVID-19 epidemic. Starting the year at 5.3% in May 2020, the jobless rate dropped to 4.6% by September (Ismail, Ramzi, & Wee Mah, 2022). However, the unemployment rate rose again in October and November of 2020, reaching 4.7% in October and 4.8% in November (Tan, 2021). According to a recent article published by the Department of Statistics in Malaysia (DOSM), the unemployment rate in Malaysia fell to 4.8% in February 2021 from 4.9% in January 2021, with the number of people seeking work decreasing by about 782,500. (Azman, 2021). People fell into poverty because of unemployment, a severe economic problem with serious negative social consequences (Didiharyono & Syukri, 2020). Many people are still concerned about keeping their current jobs or finding

new ones. A rise in jobless graduates could harm society and the economy if the unemployment problem is not addressed (Hossain, Yagamaran, Afrin, Limon, Nasiruzzaman, & Karim, 2018).

A growing graduate unemployment rate because the number of colleges and universities has also increased dramatically, leading to a larger pool of potential job candidates (Gawrycka, Kujawska, & Tomczak, 2020). This phenomenon arises because of the unequal qualifications between the demand of the employer and the graduate (Rahmat, Mohd, Omar, Kamalludeen, Zahari, Azmy, & Adnan, 2022; Byrne, 2022).

Concentrating on students enrolled in TVET programs is essential because many studies on entrepreneurial potential were carried out in non-Malaysia settings (Alamineh, 2022; Masoabi, & Alexander, 2021; Pavlova, 2020). Therefore, it is essential to investigate the potential for entrepreneurial endeavors among students enrolled in TVET programs in Malaysia. However, much more serious concerns about the quality of graduates, mainly Technical and Vocational Education and Training (TVET) students and graduates who have reportedly not fulfilled employers' expectations, or worse, could not do what the employer requires (Ibrahim, & Nashir, 2022; Abdullah, Salleh, Sulaiman, & Kamarrudin, 2022).

Since many years have passed, entrepreneurship education has become a topic of particular interest to Higher Education Institutions (HEIs) such as colleges and universities. It allows students to participate in their community's economic and social development actively. Therefore, entrepreneurship encourages more people to start their businesses (Chevalier, Calmé, Coillot, Le Rudulier, & Fouquereau, 2022; Laukkanen, 2000). As Malaysia is inspired to be an entrepreneurial nation by 2030, entrepreneurship is actively promoted among young Malaysians. Furthermore, to encourage entrepreneurial activities in society, it should actively promote young people, especially students (Bell, 2022).

This promotion should begin at an early age (Porfirio, Carrilho, Jardim, & Wittberg, 2022), and policies designed to incorporate this promotion into educational institutions needed to foster entrepreneurial skills in the youth of society (Salamzadeh, Sangosanya, Salamzadeh, & Braga, 2022). As a result, colleges and universities may play an essential role in helping students improve their competency and become more entrepreneurial in the future (Erlangga, 2022).

As a developing country, Malaysia encourages students to pursue entrepreneurship, which it has identified as a viable career option after high school (Rahim, Jani, & Wahab, 2022). Regardless of their field of study, students will be required to take an entrepreneurship course as part of their curriculum as part of the government's effort to instill an entrepreneurial spirit in them (Hashim, Sidek, & Nor, 2022). Since its merger with Entrepreneurship Education, the TVET program has become a symbol of the government's commitment to addressing youth unemployment (Rofa & Ngah, 2022). Recently, many studies in Malaysia showed that students who graduated from HEIs with high entrepreneurial personality traits exhibited solid entrepreneurial behavior. This could indicate that they have the potential to become entrepreneurs. (Feranita, Mouawad, Amin, Woon Leong, & Rathakrishnan, 2022; Sze, Ai, Fern, & Jomay, 2021; Bazkiaei, Heng, Khan, Saufi, & Kasim, 2020; Al-Jubari 2019; Al-Jubari, Hassan, & Liñán, 2019).

Since the quality of skills-based education impacts the country's overall economic development, TVET has been recognized as one of the most significant contributors to the country's economic growth (Khilji, & Roberts, 2022; Legusov, Raby, Mou, Gómez-Gajardo, &

Zhou 2022). Therefore, the TVET graduates program of today must be emphasized and encouraged to believe in their ability to create job opportunities. Youth entrepreneurs have proven to be vital to their communities as the nation's rising stars in their respective fields (Amin, 2019). Teenage development and empowerment are essential stages in a person's life because they help young people avoid poverty (Amin, 2019).

As a result, it is critical to understand the factors influencing TVET students' entrepreneurial potential to launch a new startup or entrepreneurship effort. Although entrepreneurship is considered essential to economic development and growth (Rusu & Roman, 2021; Saha, Sáha, & Sáha, 2020), few studies on TVET on this topic have been conducted. As a result, there is a need to investigate and contribute to the growing body of knowledge about the determinants of students' needs for achievement and entrepreneurial innovation toward entrepreneurial potential.

This study can help governmental institutions, agencies, academic, entrepreneurial educators, consultants, and advisors find the appropriate solutions to foster entrepreneurship in any HEI, specifically in TVET-based colleges and, consequently, in society.

Recent research has revealed a critical factor in determining an entrepreneur's entrepreneurial potential, which will influence their future actions (Anwar, & Abdullah, 2021, Qazi, Qureshi, Raza, Khan, & Qureshi, 2020). Nonetheless, potential entrepreneurial studies included Malaysia in the survey, but it only focused on postgraduate and undergraduate students in each region of the world (Singh & Mehdi, 2022; Al Mamun, Che Nawi, Nasir, & Fazal, 2020; Zhou, Li, & Shahzad, 2021; Mosbah, Al-Jubari, & Talib, 2019; Adelaja, Umar, Soomiyol, Ahmad, Najeemdeen, & Abidemi, 2018). As a result, the potential entrepreneurial requirements of TVET students' needs for achievement and entrepreneurial innovation should be thoroughly investigated.

In previous studies, entrepreneurial mentoring, which is generally focused on novice business owners (Wijaya, & Nuringsih, 2022; White, 2022; Nabi, Walmsley, & Akhtar, 2021; Kunaka & Moos, 2019) and had much less explanation on young entrepreneurs, specifically Malaysian students with a TVET background. Few studies of mentoring focus on elements such as social

distance (Junn, Whitman, Wasnik, Wang, Guelfguat, Goodman, & Middlebrooks, 2022), mismatch of values (Cain, Goldring, & Westall, 2022), inexperienced or untrained mentors (Aderibigbe, Holland, Marusic, & Shanks, 2022), and a conflict of mentor and mentee roles where it is unclear whether the mentor is acting on behalf of the mentee (Xu, Yang, Liu, & Yang, 2022).

Therefore, this study will assess the characteristics of entrepreneurial potential by establishing the moderating effect of entrepreneurial mentoring. It is essential to investigate this topic to gain insight into the entrepreneurial potential of students. Specifically, this paper aims to a) examine the influence of needs of achievement and entrepreneurial innovation on entrepreneurial potential and b) investigate the moderating role of entrepreneurial mentoring on the relationships between needs of achievement and entrepreneurial innovation on entrepreneurial potential.

This paper, in essence, is divided into different chapters. The introduction is on the first. Second, a literature review on entrepreneurship potential, needs of achievement, entrepreneurship innovation, and entrepreneurship mentoring. Third, particular methods in the study. In the fourth section, results from the survey are presented, and in the fifth, the discussion. The final section summarized findings, implications, limitations, and suggestions for future research

## 2.0 LITERATURE REVIEW

### 2.1 Theory of Planned Behaviour (TPB)

TPB is connected to this study. The TPB sees this as a predictor of business success (Gird, & Bagraim, 2008). This idea says that a person's desire to start a business can be used to measure their entrepreneurial potential (Chevalier, Aubouin-Bonnaventure, Coillot, & Fouquereau, 2022). This theory also found that people who participate in entrepreneurial activities and learn about entrepreneurship are often motivated and want to start their businesses. This theory says that basic needs affect how young people act as entrepreneurs, making them value success more than satisfaction (Dencker, Bacq, Gruber, & Haas, 2021). Jamaluddin, Zakaria, Jusoh, and Kamis (2019) all agreed that personality trait studies strongly support psychological elements as a fundamental theory for predicting entrepreneurial potential and behavior.

### 2.2 Entrepreneurial Potential (EP)

Many international scholars have investigated entrepreneurial potential at the educational institutions level (Uddin, Chowdhury, Hoque, Ahmad, Mamun, & Uddin, 2022; Elnadi, M., & Gheith, 2021; Masri, Abdullah, Asimiran, & Zaremohzzabieh, 2021; Mei, Lee, & Xiang, 2020; Nabi, Walmsley, Lián, Akhtar, & Neam). In addition, several Malaysian scholars have spoken about how entrepreneurial personality traits have been described through actions and how these attributes have demonstrated prerequisite characteristics for an entrepreneur (Hussin, 2019). However, only a few studies have been conducted at TVET institutions in Malaysia (Ibrahim, Asimiran, Abdullah, & Yusop, 2022).

The following are examples of prerequisites Koh (1996) defined, such as needs of achievement, locus of control, and innovation. In addition, more than twenty criteria listed in Timmons (1977) in Çolakoğlu & Gözükara (2016) studies described personal attributes that are conducive to entrepreneurial behavior. Hence, the study included only two specific traits that are well-known to have a significant impact on individuals' entrepreneurial potential, such as the need for achievement and entrepreneurial innovation as these characteristics are known to have a significant impact on the entrepreneurial potential of individuals (Ahmed, Khattak, & Anwar, 2022; Liu, Liang, Chang, Ip, & Liang, 2021; Reissová, Šimsová, Sonntag, & Kučerová, 2020; Vodá, & Florea, 2019).

Beside Zeffane (2013), Koi-Akrofi, Matey, Banaseka, and Quist (2020) also investigated entrepreneurial potential, which explains an individual's ability, feeling, and desire to become an entrepreneur. When students believe they have the mental and psychological capacity to meet the challenges of running a business, they have the potential to develop the skills necessary to become entrepreneurs. Furthermore, a recent study indicated that entrepreneurial traits application might entice students to become potential entrepreneurs and establish their ventures for their future careers (Al-Mamary, & Alshallaqi, 2022; Alshebami & Seraj, 2022). It is also supported by Dubey (2022), Israr and Saleem (2018), and Neneh (2019), who elaborates on students' entrepreneurial potential to start a new venture as being indirectly influenced by personality traits. As a result, the

focus of this study will be on the entrepreneurial potential and entrepreneurial personality traits of TVET students.

Since this main study merely looked at entrepreneurship potential, it is essential to clearly distinguish between entrepreneurship potential, entrepreneurship intention, and entrepreneurship readiness. Entrepreneurial potential is the feeling that an individual can and wants to start their own business (Ryan, Tipu, & Zeffane, 2011; Krueger & Brazeal, 1994), and it goes against entrepreneurship, a plan to run your own business (Maheshwari, Kha, & Arokiasamy, 2022). Entrepreneurial readiness is different because it is about a person's ability and willingness to control their behavior in an entrepreneurial setting (Olugbola, 2017; Schillo, Persaud, and Jin, 2016; Coduras, Saiz-Alvarez, & Ruiz, 2016; Ruiz, Soriano, & Coduras, 2016).

### 2.3 Needs of Achievement (NAC)

NAC is the collection of significant personal goals potential entrepreneurs aspire to and believe they can attain. This mindset motivates them to take entrepreneurial action (Kuratko, Fisher, & Audretsch, 2021; Yalcintas, Iyigün, & Karabulut (2021) define nAch as a person's motivation to succeed. Since entrepreneurship education has been emphasized in every HEI, there is indicate the importance of developing favorable attitudes to encourage students to engage in entrepreneurial behavior (Kenya-Duma, 2022; Looi & Maritz, 2021). Students who participated in entrepreneurship education may have stronger desires, and NAC has been shown to affect EP in various studies significantly (de Sousa, de Almeida, Mansur-Alves, & Huziwara, 2022; Su, Zhu, Chen, Jin, Wang, Lin & Xu, 2021; González-López, Pérez-López, & Rodríguez-Ariza, 2021). The higher the nAch of students, the more EP they have (Lin, De-Pablos-Heredero, Montes Botella, & Lin-Lian, 2022; Mónico, Carvalho, Nejati, Arraya, & Parreira, 2021). Low nAch shows low expectations, capability, self-pity, and encouragement (Shepherd & Patzelt, 2018). Students must be taught to have positive attitudes toward entrepreneurship and are encouraged to participate in entrepreneurial activities during their educational careers. Internal factors such as entrepreneurial personality traits and personal experience are used in conjunction with external factors, such as the student's attributes and personal experience (if any), to form attitudes toward entrepreneurship (Samsudin,

Ramdan, Abd Razak, Mohamad, Yaakub, Abd Aziz, & Hanafiah, 2022; Farhangmehr, Gonçalves & Sarmento, 2016).

A study found that engineering students' needs directly affect entrepreneurial potential (Dubey, 2022; Barba-Sánchez & Atienza-Sahuquillo, 2018). The results influenced future engineers' need for achievement, a prerequisite for entrepreneurial potential. For information technology, students show that students with high needs of achievement would be motivated and have a high potential to become entrepreneurs (Chaniago & Sayuti, 2022). When agriculture students graduate, the desire to be involved in entrepreneurship is high, indicating that they have the potential to become self-employed in the agriculture sector (Hussain, Ahmad, Khan, Hassan, & Shamim, 2022; Kaki, Mignogna, Aoudji, & Adéoti, 2022). It is due to agricultural students or graduates primarily located in rural areas having a slightly higher desire to start their businesses. Then, a study on entrepreneurial traits found that the need for achievement and entrepreneurial education were all significant determinants of venture creation among young students in business management programs (Astana, Malinda, Nurbasari, & Margaretha, 2022).

H1: NAC has a positive relationship with EP.

### 2.4 Entrepreneurial Innovation (EI)

Innovation has referred to as EI in the education field. (Zheng, 2022). It has been described as creative acts (Silalahi, Julyantri, Silaen, Butarbutar, & Susanti, 2022). Moreover, Drucker in Paladino (2022) asserts that to be an entrepreneur, students must be innovative. This trait has been confirmed as one of the most important characteristics of entrepreneurs. Numerous experimental findings support the belief that entrepreneurs are more creative than non-entrepreneurs (Ge, Abbas, Ullah, Abbas, Sadiq, & Zhang, 2022).

Researchers have extensively debated it and have discovered a strong relationship between innovativeness and EP when evaluating entrepreneurial capacity (Colakoglu & Gozukara, 2016). Knowledge of how to become an entrepreneur is not enough to promote EP because innovativeness toward entrepreneurship influences entrepreneurial potential (Alshebami, & Seraj, 2022; Shahzad, Khan, Saleem, & Rashid, 2021).

Innovativeness is not only about being novel and adding value to a product; it also refers to the process of discovering a new product, transforming it to appeal to consumer tastes, manufacturing, and marketing it (Wathanakom, Khlaisang, & Songkram, 2020). When students identified as having EP begin to think and act in novel ways, they may be considered innovative individuals Shahzad, M. F., Khan, K. I., Saleem, S., & Rashid, T. (2021). Without innovation, no entrepreneurship can succeed; it is one of the characteristics that differentiates student entrepreneurs from non-entrepreneurs students (Colakoglu et al., 2016). Several studies have found a statistically significant positive relationship between innovativeness and entrepreneurship intent. Thus, from the discussion, students' innovativeness motivation significantly impacts their EP (Al-Mamary et al., 2021; Mbwambo & Magoma, 2022).

H2: EI has a positive relationship with EP.

## 2.5 Entrepreneurial Mentoring (EM)

Over the last two decades, mentoring has evolved from identifying young potential employees to providing company training to expedite job promotion (Ivey, & Dupré, 2022; Cavanaugh, Cline, Belfer, Chang, Thoman, Pickard, & Holladay, 2022). Then it extended the concept to career development (Banović, R. Š. (2022).), healthcare (Mikkonen, Tomietto, Tuomikoski, Miha Kaučič, Riklikiene, Vizcaya-Moreno, & Kääriäinen, 2022), nursing (Oikarainen, Kaarlela, Heiskanen, Team-Ukkonen, Lehtimaja, Kärämänoja, & Mikkonen, 2022).), and academic mentoring (Deanna, Merkle, Chun, Navarro-Rosenblatt, Baxter, Oleas, & Auge, 2022)

Mentoring is typically a more developing process, as mentors assist mentees in learning and understanding how to be successful entrepreneurs in the future (Ghulam Nabi, Andreas Walmsley & Imran Akhtar, 2021). Study of Crisp and Cruz (2009) explained the functions of mentoring as follows; (a) assistance in determining a career path; (b) advancement of students' subject knowledge; (c) presence of a role model to emulate and from whom students can learn how to overcome challenges; and (d) provision of psychological and emotional support to students.

Mentoring entails informal communication between mentor and mentee, typically facing and over an extended period (Afolayan, & Babalola, 2020). The individual with more relevant knowledge or experience is referred to as the mentor. In contrast, the individual with less knowledge or experience is referred to as the mentee. An entrepreneurial mentor is thus someone who uses their entrepreneurial experience to assist another person in navigating a significant transition, such as transitioning from school to achieving his aspiration of becoming a successful entrepreneur. In addition, more experienced entrepreneurs can serve as mentors to less experienced students, and this can be used as practical training for future entrepreneurs (Siahaan, Silalahi, Pramana, & Sitompul, 2022).

In education, EM connects experienced lecturers as mentors and students, leading to EP (Liu, Gorgievski, Qi, & Paas, 2022). It involves transferring knowledge and psychosocial support from a mentor to a mentee (Iyoha & Igbinedion, 2022).

Consequently, EM is the act of guiding and aiding an individual in attaining their goals and aspirations to become entrepreneurs via the use of EM entrepreneurial expertise and knowledge. EM at learning institutions focuses on young adults between the ages of 15 and 24, where most people make their first big life decisions (Guenaga, Eguíluz, Garaizar, & Mimenza, 2022). The pairing of adolescents with a loving, nonparent adult who is concerned about the needs of youth and with whom they meet regularly is intended to be a protective method of cultivating entrepreneurial personality traits in young people who have the potential to become entrepreneurs (Agbonna, 2022; Napieraj, 2022; Hardie, Lee, & Highfield, 2022). Many academics believe that a mentoring program facilitates communication and improves academic performance. Mentors' ability to interact with mentees or students and provide necessary assistance has proven to be a critical component in assisting students to achieve positive outcomes (Fauchald, Aaboen, & Haneberg, 2022)

H3: EM mediates the relationship between NAC and EP

H4: EM mediates the relationship between EI and EP

The following conceptual framework in Figure 1 has been derived from the combination details of each element.

### 3.0 METHODOLOGY

About 61 780 students enrolled in the TVET program (Department of TVET, MoE, 2019). According to the

tables provided by Krejcie and Morgan (1970), the number of samples collected for data collection totals approximately 382 students, which is adequate for a population size of more than one million students. A survey was employed to collect data for the study. The items for the survey were developed based on a review of the relevant literature. The respondents were final-year students who had previously participated in entrepreneurial education subject.

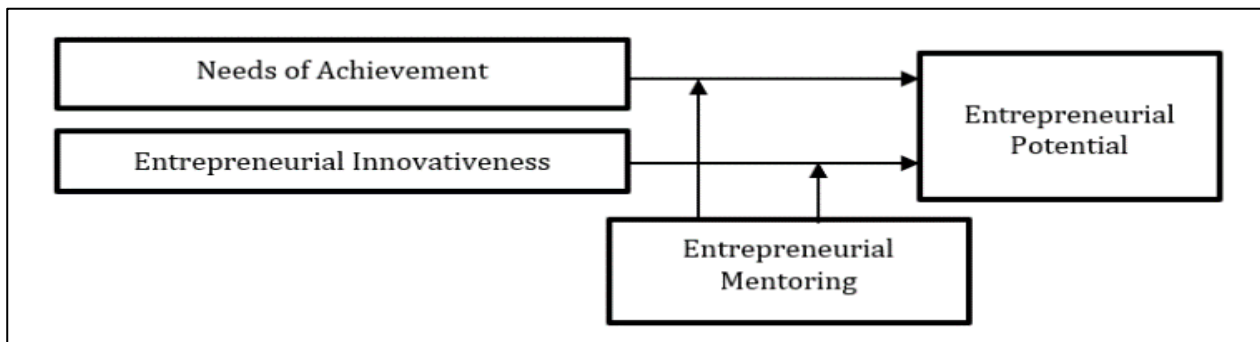


Figure 1: Proposed Conceptual Framework

About 500 questionnaires were handed out to participants, and 252 were returned with valid responses, indicating a response rate of 50.4%. The rule for the sample size states that the questionnaire may be distributed at a rate that is 10 percentage points higher than the actual sample size. In general, a maximum sample size of 10% is considered to be acceptable as long as it does not exceed 1000. (VanVoorhis, & Morgan, 2007).

As data were collected in the situation with CoVID-19, another 248 questionnaires were found missing necessary information. Therefore, it is considered disqualified to be counted for this study. Another thing, the majority of the students were required to remain in their homes and participate in online classes (Kamaludin, Chinna, Sundarasan, Khoshaim, Nurunnabi, Baloch, &

Hossain, 2020). Additionally, the only means of communication allowed were phone calls and WhatsApp groups, both of which were monitored by the appropriate lecturer. They conducted all of their communication through phone calls and WhatsApp groups, which the appropriate lecturer monitored.

This assumption is supported by a model developed specifically for this purpose, which suggests that the need for achievement and innovation positively impacts entrepreneurial potential. Figure 1 depicts the proposed conceptual framework created following the previous discussion.

This study used a five-item instrument based on the findings of studies by Gozukara et al. (2016) and Van Gelderen, Brand, Van Praag, Bodewes, Poutsma, and Van Gils (2016) was used to assess entrepreneurial potential. The need for achievement was determined using the framework developed by Indarti, Rostiani, and Nastiti (2016). Next, the respondents' entrepreneurial innovativeness was assessed using five items adapted from Wathanakom, Khlaisang, & Songkram (2020) and Law & Breznik (2017). Finally, Ting, Feng, and Qin (2009) were used to assess entrepreneurial mentoring. All responses were graded on a five-point scale, with one indicating strong disagreement and five indicating strong agreement. Table 1's constructs measurement items for the variables. This data was collected via an online survey and analyzed with SPSS and SEM-PLS, which allow for the evaluation of measurement and structural models, respectively.

Table 1: The Construct Measurements Item

No	Elements	Items
1	<i>Entrepreneurial Potential</i>	I am ready to do anything to be an entrepreneur.
2		My ultimate goal is to be a professional entrepreneur.
3		I am determined to create a business venture in the future.
4		I do not have doubts about starting my own business in the future.
5		I have a strong intention to start a business in the future.
6		My academic qualification will contribute to my interest in starting a business.
7	<i>Needs of Achievement</i>	I am going to do lots of hard work for difficult tasks relating to my studies
8		I will try hard to get good results in my studies.
9		I will be responsible for every added assignment assigned to me.
10		I will perform the assignments better than my friends.
11		I often put pressure on myself to achieve success.
18	<i>Entrepreneurial Innovation</i>	I often help my friends to create designs for assignments that involve creativity.
19		I feel more satisfied with mastering a skill than coming up with a new idea.
20		I prefer assignments that have never been done by others.
21		I will complete an assignment exactly the way it was taught to me.
22		I like to run an experiment using the same sources but in different ways.
23	<i>Entrepreneurial Mentoring</i>	The communication mode between my lecturer/mentor and myself is appropriate.
24		The communication content between my lecturer/mentor and myself is useful.
25		My lecturer/mentor and I can get along well.
26		My lecturer/mentor and I trust each other.
27		My lecturer/mentor and I have the similarity of preferences.
28		The communication mode between my lecturer/mentor and myself is appropriate.

Table 2: Demography of Respondents

Demographic	Item	Frequency	%
Gender	Male	117	46.4
	Female	135	53.5
Ethnic Group	Malays	227	90
	Chinese	6	0.3
	Indian	-	-
	Others	19	7.53
Stream of Study	Business	95	37.6
	Agriculture	10	3.96
	Engineering	101	40
	IT & Communication	11	4.36
	Tourism & Hospitality/	23	9.12
	Social Community Service	12	4.76
Family Managing the Business	Yes	122	48.4
	No	130	51.58

#### 4.0 RESULT AND DISCUSSION

Table 2 summarizes the demographic profile of the respondents. Most respondents were female (53.5%), and 46.4% were male. In terms of ethnicity, Malays were the highest number of respondents (90%). Most respondents were from engineering (40%), followed by business (37.6%), tourism and hospitality (5.7%), social community services (4.76%), and agriculture (3.96%). Roughly 48.4 percent of students come from families that are actively involved in running a business, while the other 51.58 percent do not come from families of this type.

#### 4.1 Measurement Model Analysis

Convergent and discriminant validity were used to evaluate a reflective measurement model. Convergent validity is defined as the degree to which several items measuring similar constructs agree (Hair, Hult, Ringle, & Sarstedt, 2017). Factor loadings and AVE were used to assess convergent validity, as recommended by Hair et al.

(2017). The majority of the loadings in this study exceeded the threshold value of 0.708 (Hair, Risher, Sarstedt, & Ringle, 2019), while the loadings that did not exceed the threshold value retained because they met the threshold value for AVE (Hair et al., 2017). Furthermore, the AVE value of each construct exceeded the 0.5 threshold (Hair et al., 2019). Figure 2 and Table 3 show that the measurement model's results exceed the threshold value, indicating adequate convergent validity.

The degree to which a construct differs from those other constructs is known as its discriminant validity (Hair et al., 2019). To evaluate the discriminant validity of the HTMT technique, which was developed by Henseler, Ringle, and Sarstedt (2015), it was utilized. According to Table 4, all values are acceptable according to HTMT.85 (Henseler et al., 2015) indicates that the value must be lower than 0.85. It is demonstrated that the goal of achieving discriminant validity has been accomplished.



Table 3: Results of Measurements Model

Construct	Items	Loadings	*CR.	*AVE
NAC	NA1	0.847	0.886	0.661
	NA2	0.820		
	NA3	0.819		
	NA4	0.790		
	NA5	0.610		
EI	INNO1	0.749	0.849	0.531
	INNO2	0.584		
	INNO3	0.799		
	INNO4	0.725		
	INNO5	0.768		
EM	EM1	0.729	0.914	0.639
	EM2	0.856		
	EM3	0.761		
	EM4	0.845		
	EM5	0.820		
	EM6	0.776		
EP	EP1	0.825	0.948	0.754
	EP2	0.894		
	EP3	0.894		
	EP4	0.869		
	EP5	0.901		
	EP6	0.821		
*CR: Composite Reliability *AVE: Average Variation Extracted				

Table 4: HTMT Criterion

	HI	EP	EM	NAC
HI	-	-	-	-
EP	0.782	-	-	-
EM	0.787	0.742	-	-
NAC	0.813	0.61	0.716	-

## 4.2 Structural Model Analysis

Before evaluating the structural model, the model was examined to address collinearity concerns using the Variance Inflation Factor (VIF). In this study, the VIF values for all constructs ranged from 1.472 to 1.832, below the criterion value of 5.0. (Hair et al., 2017). It suggests that lateral multicollinearity is not an issue in this study. This model demonstrated a good model fit based on SRMR (Root Mean Square Residual) values of 0.066. It does not surpass the standard value of 0.08 (Garson, 2012; Hair et al. 2010; Schumacker & Lomax, 2004). This analysis examines the correlation between all constructs, and each value meets the acceptable threshold levels for a well-fitting model, as shown in Table 5.

Table 5: Model Fit for the Constructs

	Saturated Model
SOME	0.066
Acceptable Value	< 0.08

In addition, bootstrapping is used to evaluate the structural model. The results of the structural model and hypothesis testing are presented in Table 6. The testing of hypotheses revealed a significant relationship between needs of achievement and entrepreneurial potential ( $\beta=0.371, p > 0.05$ ). Thus, H1 was supported. Furthermore, the correlation between entrepreneurial innovation and

entrepreneurial potential was statistically significant ( $\beta=0.337, p> 0.05$ ), thus supporting H2.

Table 6: Hypothesis Testing

	Original Sample (O)	T Statistics ((O/STDEV))	P Values
H1: Needs of Achievement -> Entrepreneurial Potential	0.371	5.949	0
H2 : Entrepreneurial Innovation -> Entrepreneurial Potential	0.337	4.349	0

### 4.3 Moderation Analysis

The bootstrapping procedure, with a 5000-bootstrap resampling of the data, is used to test the moderating effect of entrepreneurial mentoring. Table 8 presents the results of hypothesis testing on moderation. The interaction effect between needs of achievement\*entrepreneurial mentoring ( $\beta = 0.081, p > 0.05$ ) was insignificant, indicating that entrepreneurial mentoring did not moderate the relationship between needs of achievement and entrepreneurial potential. Thus, H3 was not supported. Meanwhile, the interaction effect between entrepreneurial innovation\*entrepreneurial mentoring ( $\beta = -0.103, p > 0.05$ ) was found significant. This indicated that entrepreneurial mentoring did not moderate the relationship between entrepreneurial innovation and entrepreneurial potential. As such, H4 was not supported.

Table 7:Hypothesis Testing and Moderation Effect

	Original Sample (O)	T Statistics ((O/STDEV))	P Values
H3: Needs of Achievement*Entrepreneurial Mentoring-> Entrepreneurial Potential	0.081	0.853	0.394
H4 : Entrepreneurial Innovation* Entrepreneurial Mentoring-> Entrepreneurial Potential	-0.103	1.186	0.236

## 5.0 CONCLUSION

Entrepreneurial potential is becoming one of the most important issues on the agenda in a growing number of countries around the world. Entrepreneurship capability can provide a beneficial alternative in allowing for more work options for self-employed youth and others (Iarmosh & Lototskaya, 2019). For future research, a depth study can further expand the research relating to the entrepreneurial potential of TVET students.

In detail, the objectives of this study were to examine the influence of the need for achievement and entrepreneurial innovation towards entrepreneurial potential and to explore the moderating role of entrepreneurial mentoring towards the need for achievement and entrepreneurial innovation and entrepreneurial potential. In a nutshell, the results of this study revealed that the relationship between needs of achievement and entrepreneurial potential was significant (H1 was supported). This study, thus, is in line with the previous studies whereby the need for achievement was positively related to entrepreneurial potential (Uysal, Karadağ, Tuncer, & Şahin, 2022; Alshebami & Seraj, 2022; Porfirio, Carrilho, Jardim, & Wittberg, 2022).

It is similar to entrepreneurial innovation, which was found to have a positive and significant relationship with entrepreneurial potential (H2 was supported), in line with the studies by (Tsolakidis, Mylonas, & Petridou, 2020; Salamzadeh, Sangosanya, Salamzadeh, & Braga, 2022).

Other than that, the findings revealed that entrepreneurial mentoring was not moderated the relationships between needs of achievement and entrepreneurial potential, as well as entrepreneurial innovation and entrepreneurial potential. Hence H3 and H4 were not supported.

In this study, entrepreneurial mentoring was not moderate the relationships of understudy variables which is contradict the finding reported by Nabi et al. (2021), that entrepreneurial mentoring moderated the relationship between determinant factors and entrepreneurial potential. Most of the time, students who want to start their businesses do not have a formal mentor. Instead, students prefer informal mentoring, which gives them more freedom (Fauchald, Aaboen, & Haneberg, 2022; Voldsund & Bragelien, 2022).

On the other hand, students who think they are feasible to start an enterprise tend to be involved in entrepreneurship. They may be highly motivated to create employment if they have business enterprises. The growing number of students' entrepreneurial traits towards entrepreneurial potential does not rely on the entrepreneurial mentoring of any mentors or lecturers. There is no difference between the students because every individual will feel that they can create self-employment and make a difference.

This study only focused on highlighting certain entrepreneurial personality traits, such as the need for achievement and entrepreneurial innovation, which were already well-known from previous research on entrepreneurial traits. Second, using an online questionnaire is something that TVET students do very infrequently, and the analysis results may be affected by this approach. Third, given that the research was conducted at TVET learning institutions, the students in their final year who have participated in entrepreneurial education classes during an earlier semester are the ones who filled out the survey.

Based on the findings, the role of entrepreneurial mentoring in the relationship between aspects of needs of achievement, entrepreneurial innovation, and entrepreneurial potential has yet to receive sufficient attention. Future research may investigate additional moderators that influence the relationship between the variables.

On the other hand, entrepreneurial mentoring needs to add more improvisational elements. Azman Ismail, Rahman, & Mahmut Sami Ozturk (2022) found that mentoring could help with psychosocial support, career development, and the relationship between mentor and mentee. Entrepreneurial mentoring among

lecturers and students must be understood and be connected to the TVET learning institution culture where entrepreneurship education takes place. So, the goals and objectives must be clarified to all lecturers for the mentoring program to work better. Also, these things can lead the institution's strategic vision and mission to be kept and supported.

This paper highlights the essential needs for achievement and entrepreneurial innovation in gauging entrepreneurial potential among TVET students. Even

though fostering entrepreneurial skills in higher education has been a significant focus for a long time, its impact has been minimal. HEIs can help students develop entrepreneurial traits with a solid commitment to entrepreneurial mentoring. However, there still needs to be more clarity in the current implementation. By embedding entrepreneurial elements in the education curriculum, educators and students at TVET institutions reap more benefits, especially securing future employment by fostering entrepreneurial traits. The study results indicated a trend toward entrepreneurial potential among Malaysia's student and graduate populations. HEIs can improve their mentoring programs for aspiring entrepreneurs by adopting this approach.

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